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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/079,291	02/19/2002	Kazuya Ono	NIKOP028, PA0440, 00/0464	6613
22434	7590	12/04/2003	EXAMINER	
BEYER WEAVER & THOMAS LLP P.O. BOX 778 BERKELEY, CA 94704-0778			MILLER, PATRICK L	
			ART UNIT	PAPER NUMBER
			2837	

DATE MAILED: 12/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Applicati n No.

10/079,291

Applicant(s)

ONO ET AL.

Examiner

Patrick Miller

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other:

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## **DETAILED ACTION**

### ***Response to Amendment***

1. The Examiner conducted an additional search based on comments from Matthew C. Graham from Art Unit 3683 and Karl Tamai from Art Unit 2834. From this search the Examiner has provided a new rejection based on the Applicant's amendment. The changes agreed to by Examiner Miller and Haruo Yawata on November 21 and 25, 2003, respectively, have not been entered.

### ***Drawings***

2. The drawings are objected to because Figure 21 is not labeled. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
  - Claims 1, 14, and 29 cite, "in a lateral direction." Please define the lateral direction with respect to the support. I.e., "in a lateral direction perpendicular to the support direction" or similar.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Tozoni (5,218,257).

- With respect to claims 1 and 14, Tozoni discloses a method and apparatus for providing support between a first structure (fig. 7, #3) and a second structure (fig. 7, #5) comprising: providing a supporting member mounted to the first structure and second structure, where the supporting member has positive stiffness with respect to a direction that differs from a support direction of the apparatus (fig. 4A, z-direction); a first section having at least one magnetic member and the first section being coupled to the first structure (fig. 7, #3 has #1); a second section having at least one magnetic member and the second section being coupled to the second structure (fig. 7, #5 has #2); and the first and second sections present negative stiffness in *a lateral direction perpendicular to the support direction* caused by magnetic force, thereby canceling out a part of the positive stiffness of the supporting member (cols. 6/7, lines 41-68/1-16).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tozoni as applied to claim 14 above.

- Tozoni does not explicitly disclose the support system being used for lithography; however, a person of ordinary skill in the art at the time of the invention would know lithography systems could be supported by Tozoni's support.

6. Claims 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono (5,780,943) in view of Tozoni (5,218,257).

- With respect to claims 29, Ono discloses a lithography system (Col. 1, lines 15-16) comprising: an illumination system that irradiates radiant energy (Col. 5, lines 5-7); a positioning apparatus that disposes a substrate on a path of the radiant energy (Col. 5, lines 7-33); a system that provides support between a first structure (Fig. 6, #20) and a second structure (Fig. 6, #22); the system including, a supporting member (Fig. 6, #32a/c) mounted to the first structure and the second structure and having positive stiffness with respect to a first direction (Col. 5, lines 34-41); a first section having at least one magnet member, and the first section being coupled to the first structure (Fig. 6, #'s 44, 46 coupled to #20); a second section having at least one magnet member, and the second section being coupled to the second structure (Fig. 6, #38 coupled to #22); and the first

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and second sections present negative stiffness caused by magnetic force, thereby canceling at least part of the positive stiffness of the supporting member (Col. 3, lines 36-56).

- Ono does not disclose the first and second sections presenting negative stiffness in a *lateral direction perpendicular to the support direction* caused by a magnetic force and canceling at least part of the positive stiffness of the supporting member.
- Tozoni discloses a support where first and second sections present negative stiffness in a *lateral direction perpendicular to the support direction* caused by magnetic force, thereby canceling out a part of the positive stiffness of the supporting member. The motivation to cancel out lateral movement is to return the support device to its “neutral” position. This provides the advantage of improved damping response (cols. 6/7, lines 41-68/1-16).
- Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the device of Ono to provide negative stiffness in the lateral direction, as defined with respect to the support direction, thereby providing the advantage of improved damping, as taught by Tozoni.
- With respect to claim 30, Ono discloses the system further comprises at least one actuator (Fig. 6, # 36a/b), wherein the driving force of the actuator and the support force generated by the system lie on the same axis (Col. 5, lines 44-51 same axis as Col. 5, lines 55-67).
- With respect to claim 31, Ono discloses the support force generated by the system is substantially perpendicular to the first direction. Specifically, the magnets and actuators exert force in the z-direction. The springs exert force in three directions, which would

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make the "z-force" substantially perpendicular to the x and y directions, respectively;

Col. 5, lines 37-41).

- With respect to claims 32 and 33, Ono discloses an object is manufactured with the lithography system, wherein the object is a wafer on which an image has been formed (Col. 5, lines 1-10).

***Allowable Subject Matter***

7. Claims 2-13 and 15-26 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
  - With respect to claims 2 and 15, the Prior Art discloses support members with bellows that are airtight and pressurized; however, the Prior Art does not suggest motivation to provide an airtight, pressurized bellow to the device of Tozoni.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Miller whose telephone number is 703-308-4931. The examiner can normally be reached on M-F, 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi can be reached on 703-308-3370. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9318.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3431.

Patrick Miller  
Examiner  
Art Unit 2837

pm  
November 26, 2003

  
**ROBERT NAPPI**  
**SUPERVISORY PATENT EXAMINER**